

(3) Before work is begun the employer shall ascertain by inquiry or direct observation, or by instruments, whether any part of an energized electric power circuit, exposed or concealed, is so located that the performance of the work may bring any person, tool, or machine into physical or electrical contact with the electric power circuit. The employer shall post and maintain proper warning signs where such a circuit exists. The employer shall advise employees of the location of such lines, the hazards involved, and the protective measures to be taken.

(b) *Passageways and open spaces*—(1) Barriers or other means of guarding shall be provided to ensure that workspace for electrical equipment will not be used as a passageway during periods when energized parts of electrical equipment are exposed.

(2) Working spaces, walkways, and similar locations shall be kept clear of cords so as not to create a hazard to employees.

(c) *Load ratings*. In existing installations, no changes in circuit protection shall be made to increase the load in excess of the load rating of the circuit wiring.

(d) *Fuses*. When fuses are installed or removed with one or both terminals energized, special tools insulated for the voltage shall be used.

(e) *Cords and cables*. (1) Worn or frayed electric cords or cables shall not be used.

(2) Extension cords shall not be fastened with staples, hung from nails, or suspended by wire.

[44 FR 8577, Feb. 9, 1979; 44 FR 20940, Apr. 6, 1979, as amended at 55 FR 42328, Oct. 18, 1990; 58 FR 35179, June 30, 1993; 61 FR 9251, Mar. 7, 1996; 61 FR 41738, Aug. 12, 1996]

§ 1926.417 Lockout and tagging of circuits.

(a) *Controls*. Controls that are to be deactivated during the course of work on energized or deenergized equipment or circuits shall be tagged.

(b) *Equipment and circuits*. Equipment or circuits that are deenergized shall be rendered inoperative and shall have tags attached at all points where such equipment or circuits can be energized.

(c) *Tags*. Tags shall be placed to identify plainly the equipment or circuits being worked on.

[44 FR 8577, Feb. 9, 1979; 44 FR 20940, Apr. 6, 1979, as amended at 55 FR 42328, Oct. 18, 1990; 58 FR 35181, June 30, 1993; 61 FR 9251, Mar. 7, 1996; 61 FR 41739, Aug. 12, 1996]

§§ 1926.418–1926.430 [Reserved]

SAFETY-RELATED MAINTENANCE AND ENVIRONMENTAL CONSIDERATIONS

§ 1926.431 Maintenance of equipment.

The employer shall ensure that all wiring components and utilization equipment in hazardous locations are maintained in a dust-tight, dust-ignition-proof, or explosion-proof condition, as appropriate. There shall be no loose or missing screws, gaskets, threaded connections, seals, or other impairments to a tight condition.

§ 1926.432 Environmental deterioration of equipment.

(a) *Deteriorating agents*—(1) Unless identified for use in the operating environment, no conductors or equipment shall be located:

- (i) In damp or wet locations;
- (ii) Where exposed to gases, fumes, vapors, liquids, or other agents having a deteriorating effect on the conductors or equipment; or
- (iii) Where exposed to excessive temperatures.

(2) Control equipment, utilization equipment, and busways approved for use in dry locations only shall be protected against damage from the weather during building construction.

(b) *Protection against corrosion*. Metal raceways, cable armor, boxes, cable sheathing, cabinets, elbows, couplings, fittings, supports, and support hardware shall be of materials appropriate for the environment in which they are to be installed.

§§ 1926.433–1926.440 [Reserved]

SAFETY REQUIREMENTS FOR SPECIAL EQUIPMENT

§ 1926.441 Batteries and battery charging.

(a) *General requirements*—(1) Batteries of the unsealed type shall be located in enclosures with outside vents or in well